



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of :
P. Goelet et al. : Atty.Dkt. 639103 CIP
Serial No: 08/216,538 : Examiner:
Filed: March 23, 1994 : Art Unit:
For: SINGLE NUCLEOTIDE POLYMORPHISMS AND THEIR
USE IN GENETIC ANALYSIS

**INFORMATION DISCLOSURE STATEMENT
PURSUANT TO 37 C.F.R. §§ 1.97 AND 1.56**

Honorable Commissioner of
Patents and Trademarks
Washington, DC 20231

Sir:

In accordance with 37 CFR §1.97 and §1.56, Applicants herewith submit the following Information Disclosure Statement. Copies of the cited documents have been previously submitted with respect to the prosecution of the parent of the present application (U.S. Serial No. 08/145,145).

Document **AL1** (Glassberg, J., UK patent Application 2135774); **AT8** (Lander, S. et al., "Strategies for studying heterogeneous genetic traits in humans by using a linkage map of restriction fragment length polymorphisms," Proc. Natl. Acad. Sci. (U.S.A.) 83:7353-7357 (1986)); **AR9** (Lander, S. et al., "Construction of multilocus genetic linkage maps in humans," Proc. Natl. Acad. Sci. (U.S.A.) 84:2363-2367 (1987)); **AS9** (Donis-Keller, H. et al., "A Genetic Linkage Map of the Human Genome," Cell 51:319-337 (1987)); and **AT9** (Lander, S. et al., "Mapping Mendelian Factors

Underlying Quantitative Traits Using RFLP Linkage Maps," Genetics **121**:185-199 (1989)), discuss the use of RFLPs in genetic analysis.

Documents **AA1** (Mullis, K. et al. U.S. Patent 4,683,195); **AR1** (Armour, J.A.L. et al., "Recent advances in minisatellite biology," FEBS Lett. **307**:113-115 (1992)); **AS1** (Jones, L. et al., "Identical twin marrow transplantation for 5 patients with chronic myeloid leukaemia: Role of DNA finger-printing to confirm monozygosity in 3 cases," Eur. J. Haematol. **39**:144-147 (1987)); **AM1** (Horn, G.T. et al., PCT Application WO91/14003); **AN1** (Jeffreys, A.J., European Patent Application 370,719); **AL3** (Keith, T. et al., PCT Application WO91/10748); **AB1** (Jeffreys, A.J., U.S. Patent 5,175,082); **AT1** (Jeffreys, A.J. et al., "DNA 'Fingerprints' and Segregation Analysis of Multiple Markers in Human Pedigrees," Amer. J. Hum. Genet. **39**:11-24 (1986)); **AR2** (Jeffreys, A.J. et al., "Individual-specific 'fingerprints' of human DNA," Nature **316**:76-79 (1985)); **AS2** (Gray, I.C. et al., "Evolutionary transience of hypervariable minisatellites in man and the primates," Proc. R. Soc. Lond. **243**:241-253 (1991)); **AT2** (Moore, S.S. et al., "The Conservation of Dinucleotide Microsatellites among Mammalian Genomes Allows the Use of Heterologous PCR Primer Pairs in Closely Related Species," Genomics **10**:654-660 (1991)); **AR3** (Jeffreys, A.J. et al., "DNA fingerprints of dogs and cats," Anim. Genet. **18**:1-15 (1987)); **AS3** (Hillel, J. et al., "DNA fingerprints of poultry," Anim. Genet. **20**:145-155 (1989)); and **AT3** (Hillel, J. et al., "DNA Fingerprints Applied to Gene Introgression in Breeding Programs," Genet. **124**:783-789 (1990)), discuss the use of variable number tandem repeat ("VNTR") polymorphisms in genetic analysis.

Methods of analyzing sequence polymorphisms are discussed in Documents **AL2** (Goelet, P. et al. PCT Appln. WO 92/15712); **AM2** (Cohen, D. et al.; PCT Appln. WO91/02087); **AN2** (Cohen, D. et al., French Patent No. 2,650,840); **AM3** (Uhlen, M., PCT Application WO90/11369); **AN3** (Fischer, S. et al., PCT Application WO90/13668); **AL4** (Wallace, R. et al., PCT Application WO89/10414); **AR4** (Saiki, R. et al., "A Novel Method for the Detection of Polymorphic Restriction Sites by Cleavage of Oligonucleotide Probes: Application to Sickle-Cell Anemia," Biotechnology **3**:1008-1012 (1985)); **AS4**

(Rudolph, J. et al., "Linkage of hyperkalaemic periodic paralysis in Quarter horses to the horse adult skeletal muscle sodium channel gene," Anim. Genet. **23**:241-250 (1992)); **AT4** (Ng-Kwai-Hang, K. et al., "Identification of K-Casien Genotype in Holstein Sires: A Comparison Between Analysis of Milk Samples from Daughters and Direct Analysis of Semen Samples from Sires by Polymerase Chain Reaction," J. Dairy Sci. **74**:2410-2415 (1991)); and **AR5** (White, M. et al., "Detecting Single Base Substitutions as Heteroduplex Polymorphisms," Genomics **12**:301-306 (1992)).

Methods of DNA amplification are discussed in Documents **AC1** (Mullis K. et al., U.S. Patent No. 4,683,202); **AD1** (Saiki, R. et al., U.S. Patent No. 4,683,194)); **AS5** (Frohman, M. et al., "Rapid production of full-length cDNAs from rare transcripts: Amplification using a single gene-specific oligonucleotide primer," Proc. Natl. Acad. Sci. (U.S.A.) **85**:89 98-9002 (1988)); **AT5** (Mullis, K., "The Unusual Origin of the Polymerase Chain Reaction," Scientific American **April**:56-65 (1990)); **AR6** (Mitsushashi, M. et al., "Gene manipulation on plastic plates," Nature **357**:519-520 (1992)); and **AS6** (Prober, J. et al., "A System for Rapid DNA Sequencing with Fluorescent Chain-Terminating Dideoxynucleotides," Science **238**:336-340 (1987)).

Methods of sampling and analyzing DNA are discussed in Documents **AT6** (Kim, C.H. et al., "Genomic Variation and Segregation of Equine Infectious Anemia Virus during Acute Infection," J. Virol. **66**:3879-3882 (1992)); **AR7** (Biswas, B. et al., "Gene Amplification by Polymerase Chain Reaction for Detection of *Ehrlichia risticii* DNA in Potomac Horse Fever," Annals NY Acad. Sci. **590**:582-583 (1990)); **AS7** (Biswas, B. et al., "Diagnostic Application of Polymerase Chain Reaction for Detection of *Ehrlichia risticii* in Equine Monocytic Ehrlichiosis (Potomac Horse Fever)," J. Clin. Microbiol. **29**:2228-2233 (1991)); **AT7** (Olive, D.M. et al., "Detection and differentiation of picornaviruses in clinical samples following genomic amplification," J. Gen. Virol. **71**:2141-2147 (1990)); **AR8** (Wheeler, J.G. et al., "Investigation of sites of pseudorabies virus latency, using polymerase reaction," Amer. J. Vet. Res. **52**:1799-1803 (1991)); and **AS8** (Ellengren, H.

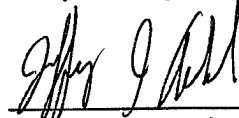
et al., "Cloning of highly polymorphic microsatellites in the horse," Animal Genetics 23:133-142 (1992)).

All of the enclosed documents speak for themselves. Applicants respectfully request that the cited documents be made of record in the present application.

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5/9/94
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